

What is claimed is:

1. An exerciser comprising:

5 a frame assembly including a base structure and an upright structure fixed to said base structure and extending upwardly therefrom, said base structure having downwardly facing surfaces for engaging an inwardly facing surface to support the frame structure thereon, said base structure extending forwardly of said upright structure so that said upright structure cannot be tipped over forwardly except by the entire frame being tipped forwardly about the forward end of said base acting as a fulcrum,

10 said upright structure including an upper pair of left and right flexible exercising pull lines carried by said upright structure at an upper end portion thereof so as to extend therefrom downwardly and forwardly, and a lower pair of left and right flexible exercising pull lines carried by said upright structure at a lower end portion thereof so as to extend therefrom downwardly and forwardly or upwardly and forwardly,

15 said upper and lower pairs of pull lines being (1) trained over left and right upper and lower horizontally swingable sets of directional pulleys fixedly attached at upper and lower ends of said upright structure and (2) having user interconnecting structures configured to be interconnected by a user either with the user's hands or the user's feet so as to be pulled by the user in substantially any plane of motion, thereby allowing the user to perform toning and range of motion exercises,

20 25 an extensible and retractable spring system carried by said upright structure and operatively connected to said flexible pull lines so as to separately, resiliently resist movement of the left of said upper and lower pull lines and the right of said upper and lower pull lines from the upper and lower end portions of said upright structure, respectively; and

 a bench assembly configured and positioned to support a user in a prone, supine or sitting position thereon so as to enable the user so positioned to interconnect with said user interconnecting structure and pull said pull lines against said resilient resistance,

30 said bench assembly including a bench frame and a bench pad mounted on said bench frame for movement between a raised operative user supporting position spaced above said bench frame, a lowered operative position disposed adjacent said bench frame

and a storage position wherein said bench assembly is connected alongside said upright structure.

2. The exerciser of claim 1, wherein said extensible and retractable spring system
5 includes three left springs connected with the left of said upper and lower pairs of pull lines by a left pulley system and three right springs connected with the right of said upper and lower pairs of pull lines by a right pulley system, said three left and three right springs being connected at low ends thereof (1) to a moveable left or right pulley assembly of the left or right pulley systems respectively, or (2) to said upright structure.

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3. The exerciser of claim 2, wherein said three left and three right springs are constructed and arranged to independently resist force applied to said user interconnect structures.

- 15 4. The exerciser of claim 2, wherein one of each of said upper and said lower pairs of pull lines form ends of the same pull cord.

- 20 5. The exerciser of claim 2, wherein the left upper and left lower pair of pull lines form ends of the same pull cord, and wherein the right upper and right lower pair of pull lines form ends of the same pull cord.

6. The exerciser of claim 2, wherein said base structure further comprises a set of weight plates constructed and arranged to prevent said upright structure from being tipped forwardly or backwardly during use.

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7. The exerciser of claim 2, wherein said base structure further comprises a set of cradle members constructed and arranged to support and retain said bench assembly in the storage position.

5 8. The exerciser of claim 7, wherein said bench frame further comprises:

a lower bench frame including a central floor-contact support member and two crossmembers fixedly attached to said central floor-contact support member;

10 an upper bench frame supporting said bench pad, said upper bench frame including floor contact feet, said floor contact feet directly supporting said bench pad when said bench assembly is placed in the lowered operative position;

15 three legs pivotally mounted to rotate about generally parallel leg axes between said lower bench frame and said upper bench frame, the rotation about said generally parallel leg axes moving said bench pad between said raised operative user supporting position and said lowered operative position;

20 a hanging crossbar fixedly attached to said upper bench frame, said hanging crossbar constructed and adapted to rest within said cradle members, forming a pivotal hinge axis with said cradle members, said pivotal hinge axis positioned and arranged such that said bench assembly is rotated about said pivotal hinge axis such that it extends parallel to said upright structure, thus establishing the storage position of the bench assembly; and

20 a locking mechanism constructed and arranged to releasably retain said bench frame in either of said raised or lowered operative positions.

9. The exerciser of claim 8 wherein said bench frame further comprises:

a set of accessory receptacles connected to said upper bench frame; and

a user support structure constructed and arranged to be removably inserted into said accessory receptacles such that said user support structure is positioned above said bench pad to support a user in said sitting position.

5 10. The exerciser of claim 9 wherein said locking mechanism comprises and extendable and retractable leg pivotally mounted between said upper bench frame and said lower bench frame such that said bench pad cannot be moved between said raised and lowered operative positions except by a change in length of said extendable and retractable leg.

10 11. The exerciser of claim 10 wherein said extendable and retractable leg comprises a first hollow tubular member and a second hollow tubular member concentrically and slidably mounted within said first hollow tubular member,

 said extendable and retractable leg moveable between a first length corresponding to said raised operative position and a second length corresponding to said lowered operative position,

15 said extendable and retractable leg having first and second holes formed through the diameters of said first and second hollow tubular members, said first hole accessible when said extendable and retractable leg is at said first length and said second hole accessible when said extendable and retractable leg is at said second length,

20 wherein said extendable and retractable leg is retained at said first length by placement of a pin in said first hole, and is retained at said second length by placement of a pin in said second hole.

12. The exerciser of claim 11, wherein the exerciser further comprises:

 a set of rotor attachment sockets connected to said upper bench frame; and

a set of rotor assemblies constructed and arranged to be removably attached to said rotor attachment sockets, said rotor assemblies including a set of rotor bases and a set of rotor handles grippable by a user and moveable through substantially 360 degrees to exercise the user's body.

5 13. An exerciser comprising:

a frame assembly including a base structure and an upright structure fixed to said base structure and extending upwardly therefrom, said base structure having downwardly facing surfaces for engaging an inwardly facing surface to support the frame structure thereon, said base structure extending forwardly of said upright structure so that said upright structure cannot 10 be tipped over forwardly except by the entire frame being tipped forwardly about the forward end of said base acting as a fulcrum,

said upright structure including upper and lower flexible exercising pull lines trained over directional pulley assemblies, said directional pulley assemblies pivotally mounted on said upright structure at upper and lower end portions for rotation about pivotal directional pulley 15 axes, said flexible pull lines extending downwardly or upwardly and forwardly from said directional pulley assemblies, and having user interconnecting structures configured to be interconnected by a user either with the user's hands or the user's feet,

an extensible and retractable spring system carried by said upright structure and operatively connected to said flexible pull lines so as to resiliently resist movement of said pull 20 lines in directions downwardly or upwardly and forwardly from the end portions of said upright structure,

a bench assembly configured and positioned to support a user in a prone, supine or sitting position thereon so as to enable the user so positioned to interconnect with said user interconnecting structure and pull said pull lines downwardly or upwardly and forwardly against 25 said resilient resistance which pull provides the user exercise while creating a force on the upper or lower end portions of said upright structure which tends to tip the upright structure forwardly about the fulcrum provided by the forward end of said base structure,

said bench assembly including a bench frame and a bench pad mounted on said bench frame for movement between a raised operative user supporting position spaced above said bench frame and a lowered operative position disposed adjacent said bench frame,

5 said bench frame including an inner end portion having a load transmitting connection with said base structure and an outer end portion extending forwardly beyond the forward end of said base structure having downwardly facing surfaces for engaging the upwardly facing horizontal surface engaged by the downwardly facing surfaces of said base structure,

10 the load transmitting connection of said bench frame with said base structure being (1) partitioned when said bench pad is within the raised or lowered operative position thereof so as to transmit a portion of the load defined by the weight of a user supported on said bench pad to said base structure at a position spaced inwardly of the forward end thereof to thereby provide additional forward tipping resistance to said frame structure and (2) constructed and arranged to allow the bench frame and said bench pad, when in said lowered position thereof to be moved into a connected storage position wherein said bench pad and bench frame are upright alongside 15 said upright structure.

14. The exerciser of claim 13, wherein said extensible and retractable spring system includes three left springs connected with the left of said upper and lower pull lines by a left pulley system and three right springs connected with the right of said upper and lower pull lines 20 by a right pulley system, said three left and three right springs being connected at low ends thereof (1) to a moveable left or right pulley assembly of the left or right pulley systems respectively, or (2) to said upright structure.

25 15. The exerciser of claim 14, wherein said three left and three right springs are constructed and arranged to independently resist force applied to said user interconnect structures.

16. The exerciser of claim 15, wherein one of each of said upper and lower pull lines form ends of the same pull cord.

17. The exerciser of claim 14, wherein said bench frame further comprises:

5 a lower bench frame including two generally parallel floor-contact support members and a plurality of crossbraces;

 an upper bench frame supporting said bench pad, said upper bench frame including floor contact feet, said floor contact feet directly supporting said bench pad when said bench assembly is placed in the lowered operative position;

10 three legs pivotally mounted to rotate about generally parallel leg axes between said lower bench frame and said upper bench frame, the rotation about said generally parallel leg axes moving said bench pad between said raised operative user supporting position and said lowered operative position; and

15 a locking mechanism constructed and arranged to releasably retain said bench frame in either of said raised or lowered operative positions;

 wherein the load-transmitting connection between said base structure and said bench frame is established by a user-adjustable bolted connection between one of said plurality of crossbraces of said lower bench frame and a corresponding crossbrace of said base structure; and

20 wherein another of said plurality of crossbraces is connected to and forms a pivotal hinge axis with said base structure, said pivotal hinge axis positioned and arranged such that said bench assembly is rotated about said pivotal hinge axis such that it extends parallel to said upright structure, thus establishing the storage position of the bench assembly.

18. The exerciser of claim 17 wherein said bench frame further comprises:

25 a set of accessory receptacles connected to said upper bench frame; and

a user support structure constructed and arranged to be removably inserted into said accessory receptacles such that said user support structure is positioned above said bench pad to support a user in said sitting position.

5 19. The exerciser of claim 18, wherein the exerciser further comprises:

a set of rotor attachment sockets connected to said upper bench frame; and

a set of rotor assemblies constructed and arranged to be removably attached to said rotor attachment sockets, said rotor assemblies including a set of rotor bases and a set of rotor handles grippable by a user and moveable through substantially 360 degrees to exercise the user's body.

10 10 20. The exerciser of claim 19 wherein said locking mechanism comprises and extendable and retractable leg pivotally mounted between said elongate support members and said upper support frame such that said bench pad cannot be moved between said raised and lowered operative positions except by a change in length of said extendable and retractable leg.

15 15 21. The exerciser of claim 20 wherein said extendable and retractable leg comprises a first hollow tubular member and a second hollow tubular member concentrically and slidably mounted within said first hollow tubular member,

20 20 said extendable and retractable leg moveable between a first length corresponding to said raised operative position and a second length corresponding to said lowered operative position,

 said extendable and retractable leg having first and second holes formed through the diameters of said first and second hollow tubular members, said first hole accessible when said extendable and retractable leg is at said first length and said second hole accessible when said extendable and retractable leg is at said second length,

wherein said extendable and retractable leg is retained at said first length by placement of a pin in said first hole, and is retained at said second length by placement of a pin in said second hole.

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